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RSONAL HYGIENE FOR WOMEN

CLELIA DUEL MOSHER, M.D.

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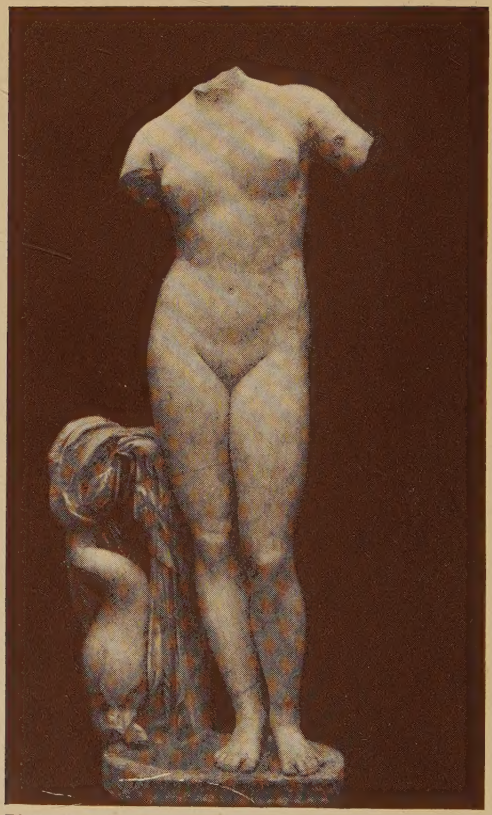

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PERSONAL HYGIENE FOR WOMEN

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PREFACE

The World War and the strain and stress of its aftermath have made unprecedented demands on women as well as men. It has been the duty of every woman to meet this economic demand without injury to herself racially; and, rising to this demand, she not only has done the work expected but has demonstrated that the anxiety on her behalf on account of the effect of such unusual physical labor is uncalled for. On the contrary, as step by step scientific knowledge of her physiology advances, her traditional incapacity and the physical weakness supposed to be inherent in her sex have been shown to be due not to sex but to other and removable causes.

Take, for example, the question of the difference in the muscular strength of men and women, which experiment has demonstrated to be independent of sex as such. Further study has shown that the modern woman has increased in height and weight in the last thirty years, the increase being due, in part at least, to more exercise and more hygienic clothing—conditions which have resulted in a more fully developed and more perfectly functioning woman. The time has passed when a woman may rest on her traditional periodic

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incapacity and be an invalid one week out of four. The present stirring times demand women at maximum capacity for work every day in the month—fit for any work at any time; and as increased knowledge demonstrates that their periodic incapacity may be laid aside, the world recognizes that women may be racially fit and at the same time economically efficient.

This little book does not undertake to cover the whole field of personal hygiene. The attempt has been made to deal only with some of the special problems of women's health, concerning which the lack of knowledge has been so disastrous to women and to the race. It is hoped that this detailed presentation of these most important facts may bring to a large number of women the simple methods which make for more perfect functioning and increased efficiency. Thus may women in general learn how to be free from periodic disability, through the knowledge which the college woman has had long enough to make her functional periodicity no more a necessary handicap.

The following books are recommended, in addition to the books and papers mentioned in the footnotes, for use in connection with this text:

Womanhood and Health, by Dr. Christine M. Murrell (London: Mills & Boon). This book

treats with admirable clearness the important subject of reproduction.

Safeguarding the Special Senses, by Dr. Henry O. Reik (Philadelphia: F. A. Davis & Company). A brief, simple discussion of the hygiene of the eye, ear, nose, and throat.

The material included in this volume (which serves as fourth edition of *Health and the Woman Movement* and second edition of *Woman's Physical Freedom*) has been entirely revised and brought up to date.

CLELIA DUEL MOSHER

STANFORD UNIVERSITY
April 1927

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PERSONAL HYGIENE FOR WOMEN

CHAPTER I

TRADITIONAL HANDICAPS

Sex differences.—"Bring boys and girls up by the same method, let them as men and women have the same interests and occupations, and in a few generations there will be no difference in the sexes but one of anatomy," is a statement of a feminist advocate. In refutation Professor Sedgwick,[1] of the Boston Institute of Technology, asserts that, "Sex is a deep-seated structural difference, affecting every organ, every tissue, every cell in the body," and goes on to say: "Women have narrower, rounder shoulders than men, broader hips, more fatty tissue under the skin, smaller stature, lesser weight, smaller feet and hands. There is no reason to doubt that sex makes a difference throughout the entire structure, the brain included." After quoting from a distinguished physiologist (unnamed) he concludes:

[1] Sedgwick, Dr. W. T., interview, "Feminist Revolutionary Principle Is Biological Bosh," George MacAdam, *New York Times,* Jan. 18, 1914, Sec. 5 (Magazine), p. 2.

"My experience as a teacher has proved the existence of these handicaps. I have been obliged to use different methods when teaching women."

Other equally eminent scientists and teachers have differed from Professor Sedgwick on this subject. Dr. Simon Flexner,[2] Director of the Rockefeller Institute for Medical Research, states: "I differ from him completely in his main contention. I do not believe that there is physiological foundation for the assertion that the functions of the brain, and thus the operations of the intelligence, are in any way affected by the differences in anatomical structure in the two sexes.

"We all allow among both men and women for wide divergences of individual traits, and while it is doubtless true that, so far as emotional sensibility is concerned, women are more reactive than men, yet many men are emotionally highly responsive, and there are by no means a small number of men who are more emotional than many women. And yet, as no one has undertaken to determine fitness for public responsibility among men upon such a temperamental quality, it may justly be asked why the test should be applied to women.

[2] *New York Times,* February 15, 1914, Sec. 5 (Magazine), p. 4.

"Like Professor Sedgwick, I have had experience with teaching women under as trying conditions as ordinarily arise in laboratories. The study of medicine today makes a heavy demand on the fiber and endurance both of men and women. I have seen failure and success achieved, but the cleavage was not along sex lines. My observation is that women in laboratories toil on, day by day and month by month, and as a rule have themselves under a degree of physical and emotional control that makes any difference in their daily physical state imperceptible."

Dr. James Harvey Robinson,[3] formerly Professor of History at Columbia University, among other things says: "The fact that women are on the whole somewhat weaker physically than men, and are subject to periodical disabilities from which men are exempt, would be highly important were it not that physical force has played a very subordinate part in the development of civilization. It is not the physically strong that have commanded and controlled mankind and added to mankind's resources of knowledge and art. Even in a direct encounter it is more advantageous to have a well-directed revolver, a product of civilization, than a mighty fist, a product of nature."

[3] *Idem.*

Dr. Frederick Peterson,[4] Professor of Nervous and Mental Diseases at Columbia University, quotes from a letter of Thomas Huxley written to the London *Times:*

> Without seeing any reason to believe that women are, on the average, so strong physically, intellectually, or morally as men, I cannot shut my eyes to the obvious fact that many women are much better endowed in all these respects than many men, and I am at a loss to understand on what grounds of justice or public policy a career which is open to the weakest and most foolish of the male sex should be forcibly closed to women of vigor and capacity. We hear a great deal about the physical disabilities of women. Some of these alleged impediments no doubt are really inherent in their organization, but nine-tenths of them are artificial—the product of their life.

Dr. Peterson adds further: "Professor Lester Ward states that in the order of biological evolution the male was primarily and normally an inconspicuous and insignificant afterthought of Nature. It is certain that all through the animal world up to man the female of every species feeds and defends herself and honorably earns her own living. Only the human female has ever been dependent on her mate for her living. It is also certain that this was not the case among primitive

[4] *New York Times,* February 15, 1914, *loc. cit.*

races, but that it gradually came about. There have been periods in human society where mother-right was supreme and races still exist where it can be observed."

It may be noted without too great digression that these statements are borne out by the work of Mathilde and Mathias Vaerting. They have reviewed the history of the peoples where women have been and in some tribes still are the dominant sex. They show that the characteristics which we are wont to describe as masculine or feminine are not due to sex. The dominant sex develops those attributes which we are accustomed to call masculine and the subordinate sex, whether women or men, show the characteristics which we usually term feminine.[5]

Dr. Peterson goes on to say: "One assertion made by Professor Sedgwick is that 'in spite of the open door . . . . so few women become doctors' and 'it is significant that there are almost no women surgeons.' In the first place, the door is not open in the sense of being wide open. It is open enough to squeeze through. There is scarcely a university in America whose medical department

[5] Vaerting, Mathilde and Mathias, *The Dominant Sex,* translated by Eden and Cedar Paul. London: George Allen and Unwin, 1923.

admits women students, and it is as yet impossible in this country for any female students to get hospital training equal in quality to that afforded to male students.

"In the second place, this crack in the door has been open for just about one generation. The first woman in America to graduate in medicine, Dr. Elizabeth Blackwell, died less than five years ago.[6] Yet it is surprising how many women doctors there are now all over the United States, and in every large city there are among them many good surgeons. The United States Census for 1900 gives the number of women physicians and surgeons as 7,387.

"For a number of years I was a teacher in the Women's Medical College of the New York Infirmary. Judging from that experience with women students, I believe there is no physical, psychical, or sexual reason why, in time, when all barriers against them have broken down, there

[6] Dr. Elizabeth Blackwell (1821–1910) studied medicine in Geneva University, New York; M.D., 1849. Founded New York Infirmary for Women and Children (which included interneships for young women physicians), 1857; placed on English Register, 1859. Medical College of New York Infirmary established in 1865. Began practice in England, 1869. She was born in Bristol, England, of British parentage.

should not arise some woman surgeon equal or even superior to any man we have now."

Dr. Peterson might also have mentioned the pioneer work of Dr. Sophia Jex-Blake, who founded the London School of Medicine for Women;[7] nor does he mention that in Great Britain there is a relatively large number of successful surgeons among the women in the medical profession.

Dr. William H. Howell,[8] Professor of Physiology at Johns Hopkins University Medical School, also differs from Professor Sedgwick: "If any one care to claim that the brain of woman is inferior to or in any essential respect different from that of man, he must seek the evidence for his belief in his personal experience or in the archives of history—certainly not among the sober records of science. So far as my personal experience as a teacher goes, I may say that it has been

[7] Dr. Sophia Jex-Blake (1840–1912) began the study of medicine in Boston, Mass., 1866; M.D., University of Berne, 1877; University of Edinburgh, 1894. Member of the Irish College of Physicians, 1880. Founded London School of Medicine for Women, 1874; opened dispensary for women and children in Edinburgh, 1878; Cottage Hospital, 1885; established Edinburgh School of Medicine for Women, 1886.

[8] *New York Times,* February 15, 1914, Sec. 5 (Magazine), p. 4.

my duty for many years to instruct mixed classes of men and women in the classroom and in the laboratory, but I have never been conscious in any way that it was necessary to make concessions to the women as the weaker vessels.

"On the contrary, in the matter of zeal for work and of intelligence in grasping facts and principles they have shown themselves, on the average, quite as capable as the men students, while in one respect, namely the ability to express what they know in clear and logical English, I have found them as a rule superior to men. Somewhere in their previous education they seem to have been better trained in this latter respect."

The late Dr. Franklin P. Mall,[9] formerly Professor of Anatomy at Johns Hopkins University Medical School, agreed with this group of scientists and teachers quoted above: "My own experience certainly does not correspond to his [Dr. Sedgwick's]. I have also had at least twenty years' experience with more than one thousand picked college graduates in biological teaching, and have yet to learn that women students need special consideration. In fact, no concessions have been made to women, and as a group they have invariably stood above the average. This year we shall

[9] *New York Times,* February 15, 1914, *loc. cit.*

graduate in medicine eighty men and ten women; two men and four women lead the class!"

Most of these eminent teachers, while taking issue with Professor Sedgwick as to the need of special consideration for women in classroom and laboratory, assume a periodic handicap. This is discouraging, if true; but what of the facts?

Changing status of women.—Life itself, not the feminist movement, is altering the status of women. Olive Schreiner in her book called *Woman and Labor,* published only a few years ago, points out that the changes in economic conditions have taken away the woman's occupation as a manufacturer in the home. Even the demands made by her profession of motherhood have been lessened by the economic limitations in the size of the family. With these diminishing requirements there is danger that she will sink into a condition of parasitism which will result, not only in her own physical and mental deterioration, but in an injury to the race. Her book ends with, "Today we are found everywhere raising our strange new cry—'Labor and the training which fits us for labor!'"

The European war demonstrated that a woman may not only fight in the trenches, but may receive the same rewards for bravery as her husband or

brother. Russian women in the Battalion of Death fought at the front, and an army of Serbian women served in the trenches. In England regiments of women trained for war work. In France, Germany, England, Italy, and even in America, women replaced men in all occupations, both the higher and lower, even those requiring great endurance to exposure and physical strain: we heard of women conductors and motormen, railroad laborers, cab drivers, baggage porters; we have long heard of their plowing, sowing, and reaping. In other words, while men were at the front, the work of the world was carried on by women.

At the present moment all professions and occupations are not only open to women but are being successfully undertaken by them. Only yesterday women went to college at great personal sacrifice. And dire were the predictions of the evil results to their health and to the race. Characterized as "hermaphrodite in mind," and "divested of her sex," the college woman failed to develop the anticipated evils. She was found[10] to be rather healthier than her sisters who did not go to college, to marry as other women of her class, and to bear a rather larger number of healthy chil-

[10] Coolidge, Mary Roberts, *Why Women Are So,* chapter xi, "The Phantom of the Learned Lady."

dren. Today women go to college as a matter of course and without comment.

The women of the United States, millions in number, cast their votes, perform their civic duties, even serving as election officials, members of state legislatures and of Congress, without destroying health or homes. In England women have entered the House of Commons and served in the government. Where are the traditional handicaps of sex? What becomes of the statement made by the distinguished physiologist (unnamed) whom Professor Sedgwick quotes as follows: "During the periodical recurrence there is apt to be more or less discomfort and nervous irritability; the woman is not quite herself, and those responsible for her happiness ought to watch and tend her with special solicitude, forbearance, and tenderness, and protect her from anxiety and agitation. Any strong emotion, especially of a disagreeable character, is apt to work harm that may be followed by serious consequences, perhaps of a lasting structural character. A sudden chill often has the same effect. Violent exercise at this time should also be avoided. The climacteric is a critical period: various local disorders are apt to supervene, and mental derangement resulting in abnormal behavior."

If this statement is true the outlook for the future of the race is gloomy indeed. However, Olive Schreiner's cry for labor has already been answered: millions of women, as we have seen, are carrying on every kind of labor, and daily the number is augmented. Millions on millions of women, instead of being sheltered and cared for during the so-called incapacitating periodic function of menstruation, suffer every hardship and exposure. This was especially true during the recent war period; could there be emotions more poignant, conditions of labor and even conditions of life more frightful, than those the women of the warring nations were called upon to endure?

Examination of these traditional physical handicaps.—The historical development of the modern woman and the traditions which have unconsciously shaped women's mental attitude toward themselves and toward life have been traced by Mrs. Coolidge in her book, *Why Women Are So.* Is it not possible that at least some of women's physical disqualifications as well have been owing to surrounding conditions rather than inherent in their sex? I agree with the distinguished anatomist in his statement that "we cannot make a man into a woman nor a woman into a man." I will go still farther and say that we do not even wish to

try to do so. But we may make a judicial examination of these traditional handicaps in the light of scientific knowledge. Indeed we must do this, since the new conditions resulting from the World War oblige women to undergo the strain of unparalleled labor which they are traditionally unfit to bear; in this intolerable situation the need for truth with regard to women's physical limitation becomes imperative.

Sir Arbuthnot Lane[11] is quoted as saying that the modern woman is badly nourished and has lost most of her normal physical characters: "Her capacity to bear children has become complicated by much trouble and innumerable sequelae which too often make life miserable. Her sexual characters are very defective. She is also degenerating in size." Dr. Winifred Cullis, Professor of Physiology in the London School of Medicine for Women, takes the opposite view: "The women of 1924 are physically superior to the women of a quarter of a century ago and are steadily improving in physique and healthfulness. Our women are progressing toward the truest and fullest womanhood."

A judicial examination of the evidence should determine what is the truth.

[11] *Journal of American Medical Association,* Vol. LXXXIV, No. 8 (February 21, 1925), p. 606.

CHAPTER II

RESPIRATION AND MENSTRUATION

In 1892 every physiology still taught that women breathed costally, and men abdominally. The costal respiration of women was believed to be a provision against the time of gestation. In 1894 at Stanford University,[1] and at Harvard,[2] it was demonstrated, independently and almost simultaneously, that there is no sexual difference in the type of respiration. My own experimental work on respiration has demonstrated that pregnancy interferes less with the respiration than has generally been believed. The respiratory movements in the different regions tend to become equalized, but the diaphragmatic respiration persists as late as the eighth and even the beginning of the ninth month of pregnancy. There is, therefore, no reason why women should not use the diaphragm in breathing. Moreover, the movements of the dia-

[1] Mosher, Clelia Duel, "Respiration in Women," preliminary report as thesis for M.A. degree, Stanford University, May 1894. (Read at California Science Association, January 3, 1896.)

[2] Fitz, G. W., "A Study of Types of Respiratory Movements," *Journal of Experimental Medicine,* Vol. I, No. 4 (November 1896).

phragm materially aid the expulsion of the bile from the common duct, as has been experimentally proved by Heidenhain and his pupils, according to Naunyn. The inactivity of the diaphragm may be one of the factors in the production of gall-stones, which are of more frequent occurrence in woman than in man—another undesirable result of the unnecessary costal type of breathing in women. Moreover, strong abdominal muscles are essential to a good figure. They aid in the second stage of labor, are the chief support of the kidneys and abdominal organs, and, as we shall presently see, are very potent factors in preventing menstrual pain and excessive flow. Both Dr. Fitz's experiments and my own clearly demonstrate that constricting clothing is the most potent factor in the production of the costal type of respiration in many women.[3]

We shall return to the problem of suitable clothing later.

Now if we analyze the serious objections to women in industry and the plans for their care

[3] Mosher, Clelia Duel, "The Frequency of Gall-Stones in the United States" (read before the Johns Hopkins Hospital Medical Society, March 4, 1901), *The Johns Hopkins Hospital Bulletin,* Vol. XII, No. 125 (August 1901).

and protection, we inevitably come to the one function, menstruation, whether this be put into words or not.

What I am about to say in regard to the function of menstruation is based on the study of more than 2,000 women during 12,000 menstrual periods. The observations and work in the physiologic and hygiene laboratories have extended over a period of 34 years. May I ask you, therefore, to discard all your preconceived ideas, your sex traditions, and your individual experience, and consider judicially the statements I am about to present? The best-developed women who have come under my observation have a period of not more than two or three days, free from pain, and in many cases are at their maximum efficiency every day in the month. Others, who have had prolonged periods and more or less pain, have, in the majority of cases, found that this condition can be readily remedied.

Causes of painful menstruation.—The painful menstruation so commonly observed is, in the larger number of cases, congestive in type, and is produced by: (1) the upright position (Moscati); (2) alteration of the normal type of respiration by disuse of the diaphragm and of the abdominal muscles; (3) the lack of general muscular de-

velopment; (4) inactivity during the menstrual period; (5) psychic influences. In order to follow the relation between these causes and the physiologic treatment about to be suggested, it is necessary to have clearly in mind not only the following anatomic but also certain physiologic facts concerning circulation.

The circulatory apparatus in human beings is not materially different from that in the higher mammals which go on all fours and thus carry the body in the horizontal instead of the upright position. The vena cava, the large vein emptying into the heart, is without valves; and, therefore, in the upright posture, a great column of blood must be sent back to the heart against the force of gravity. You have all had the experience in walking when your hands have been down at your sides, of noticing how they will first grow warm, then may swell, and finally hurt. This is the effect of gravitation on the circulation in your arms. The chief factor in the return of the blood to the heart is the negative pressure in the thorax, or chest. "At each inspiration blood is 'sucked from the extrathoracic into the intrathoracic veins.'" The thoracic portion of the vena cava inferior, which is under less pressure than the abdominal portion, has this difference increased by the de-

scent of the diaphragm and the contraction of the abdominal muscles.[4]

Whatever part of the body is functioning at any particular time has a larger supply of blood. You have also had the experience when doing close mental work of having your head hot and your hands and feet cold; a larger supply of blood is in your brain and less in your hands and feet. You have also tried to do hard mental work after a hearty dinner and found your brain less active; the larger supply of blood was in your digestive organs and less in your brain. Thus the uterus, during the menstrual period, has its blood-supply augmented, and at the same time the general blood-pressure is lowered[5] and the local blood-pressure raised. By the menstrual hemorrhage the excessive local blood-pressure is relieved. Contrary to the old Hebrew belief, the menstrual flow is not getting rid of impurities; this blood, lost in the menstrual flow, is the same kind of blood as that used for mental or physical activity, and represents, therefore, potential en-

[4] See Howell, W. H., *Text-Book of Physiology,* p. 588.

[5] Mosher, Clelia Duel, "Normal Menstruation and Some of the Factors Modifying It" (preliminary note), *The Johns Hopkins Hospital Bulletin,* Vol. XII (1901), p. 178.

ergy. In the intermenstrual period more energy of the person must be used to replace this loss.

This periodic physiologic congestion of the uterus in woman, which occurs about the time of menstruation, is frequently so excessive that it produces pain. The upright position, lax abdominal muscles, costal instead of diaphragmatic breathing, and constriction of the body by clothing which interferes with the use of the abdominal muscles and diaphragm—all combine to develop and promote this excessive pelvic congestion. As a result, there is pain at the menstrual period, prolonged hemorrhage, and undue loss of blood.

Cure of painful menstruation.—In a large number of cases I have corrected these conditions by the following physiologic method: All tight clothing having been removed, the woman is placed on her back, on a level surface, in the horizontal position. The knees are flexed and the arms are placed at the sides to secure perfect relaxation. One hand is allowed to rest on the abdominal wall without exerting any pressure, to serve as an indicator of the amount of movement. The woman is directed to raise the hand by lifting the abdominal wall without straining, then to see how far the hand can be lowered by the voluntary contraction of the abdominal muscles, the importance of this

contraction being especially emphasized. This exercise is repeated eight or ten times, night and morning, in a well-ventilated room, preferably while she is still in bed and in her night-clothing. She is cautioned to avoid jerky movements and to strive for a smooth, rhythmical raising and lowering of the abdominal wall.[6] These exercises should be taken twice daily every day in the month including the time of menstruation. The bladder should always be emptied before the exercises are begun. The breath must not be held while the woman is doing this exercise. If she is inclined to make the mistake of holding her breath, let her keep her mouth open, breathing naturally. It is often necessary to urge the concentration of attention upon the abdominal muscles and to forget the breathing, which will take care of itself. In many cases and particularly in those who need the exercise, the voluntary contraction of the muscles will at first be very slight. The exercises must be continued over a considerable period of time to accomplish any very striking results, long enough

[6] Mosher, Clelia Duel, "A Physiologic Treatment of Congestive Dysmenorrhea and Kindred Disorders Associated with the Menstrual Function," *Journal of the American Medical Association,* Vol. LXII (April 25, 1914), pp. 1297–1301.

to develop these muscles and to establish their more or less constant use without conscious effort. Not until these muscles are developed to a point where a good contraction is possible can any marked result be expected. This seems to be especially true in women who have no pain but have a prolonged menstruation. To shorten the period in such cases, the exercises must be continued for a longer time in order to make any appreciable difference.

These exercises have, in a number of cases where no organic disease existed, controlled the unpleasant and often serious symptoms at the change of life; at puberty they have resulted, when tried, in "a gain in growth and weight of girls who were becoming anemic and languid, and who, though increasing in height, were not gaining in weight."[7]

In other hands, my physiologic treatment has produced equally satisfactory results: women who have learned these exercises under my direct teaching have passed their knowledge on to other women in widely separated portions of the country; others have learned the method from the papers previously published in the medical journals.

[7] *Idem.*

Dr. Margaret L. Johnson makes the following report of her use of my physiologic treatment of congestive dysmenorrhea and kindred disorders: 103 cases of abnormal menstrual conditions relieved as follows—72 cases of dysmenorrhea (painful menstruation), 17 cases of menorrhagia (excessive flow), 14 cases of metrorrhagia (uterine hemorrhage between menstrual periods). Failure to get favorable results was limited to 8 cases where serious surgical conditions and displacements were found, and 28 other cases which, being under observation for only a short time, gave no final report.

Miss McKinstry, while at Packer Institute in Brooklyn, New York, reported that she found in a group of 720 women students about 144, or 20 in a hundred, having menstrual pain. With these exercises she reduced the number having pain to 29, or about 4 in each hundred; she stated that, with the full co-operation of the girls, she could undoubtedly have reduced the number to 2 in a hundred.

The method is so simple that a certain number of failures have been recorded, or satisfactory results have been unduly delayed, because on occasion the girl has been simply directed to "do abdominal breathing."

But why should so simple an exercise as the using of the abdominal muscles and diaphragm for about five or ten minutes a day, an exercise which any woman can do by herself, correct the age-long trouble associated with the functional periodicity of women, prevent some of the troubles occurring at puberty and the menopause (change of life), correct constipation, often relieve congestive headaches, occasionally stop the morning sickness of pregnancy and the after pains of childbirth? It reads like the advertisement of a proprietary remedy or some cure-all device exploited by an advertising quack.

I believe the results are due to four things: (1) the overcoming of the effect of gravity on the circulation in the upright posture by the restoration of the tone and action of the abdominal muscles and diaphragm; (2) the proper support, in their normal position, of the abdominal organs by strengthened abdominal muscles; (3) the correction of constipation by the massage of the intestines brought about through the descent of the diaphragm and the contraction of the abdominal muscles; (4) the doing away with the idea that menstruation is an illness, thus eliminating fear and worry.

Things to avoid.—It has been found important

to emphasize the fact that the woman should forget all about the question of breathing and center attention on the abdominal muscles, letting the breathing take care of itself. A common error is the undue raising of the abdominal wall to the point of strain, whereas an even more vital part of the exercise is the contraction of the abdominal muscles, the wave of contraction beginning in the lowest segments of these muscles. It will be found too often that most of the exercise is done by the diaphragm, with very little contraction of the abdominal muscles.

The use of whiskey, gin, or other forms of alcohol to relieve pain is, like the use of drugs, both dangerous and unnecessary. The same result may be accomplished without danger by getting the woman warm, by hot applications or a warm bath, and by taking hot water into the stomach. But simpler still is the exercise of the abdominal muscles and diaphragm; moreover, it accomplishes the same end. These exercises may be done profitably even in the upright posture, although they are more effective in the horizontal position, which, as stated before, does away with the effect of gravity on the circulation. The woman, of course, should get warm enough to restore normal circulation in the skin as well as do the exercises.

In my experience the accepted theory that menstruation is an inevitable "illness" produces a morbid attitude, while the traditional treatment of rest in bed, keeping the woman very warm, directing the attention solely to the sex zone of the body, at the same time leaving the mind without wholesome occupation, favors the development and exaggeration of whatever symptoms there may be.

The lassitude, headache, and nervous irritability which it has been customary to associate with the menstrual function, may readily be explained by (1) the lowered general blood-pressure and excessive congestion of the uterus which causes the lack of a proper blood-supply in other organs, and (2) an inactivity which brings about both a lessened oxygen intake and a decreased carbon-dioxide elimination, thus favoring the development of these undesirable symptoms. To these factors must be added the normal stimulation of the sex centers at this time, a stimulation which may express itself in nervous irritability and depression. The periodic raising of the local blood-pressure and the lowering of the general blood-pressure has been grossly exaggerated in the woman by her physical inactivity and by her constricting dress and unhealthful habits.

Constrictive dress and inactivity apparently in-

terfere more with the abdominal muscles than with the diaphragm. The degree to which they induce menstrual pain may be suggested by a comparison of my observations made in 1893–96 with others made in 1910–14. In the earlier group a larger proportion of the women had pain and discomfort of severe type and of relatively long duration. In the later group the larger number of cases have no disability, and such pain as the remainder have is rarely severe and is of short duration. In 1893–96 the average width of skirts worn by 98 young women was 13.5 feet—the widest 15 and the narrowest 9 feet. The weight of the outside skirt alone was often nearly as much as the weight of the entire clothing worn by a modern girl. Moreover, several under-petticoats were carried from the waist, which at that time had to be compressed to wasp-like proportions. It is certainly not difficult to understand why so many women had menstrual pain at that period.

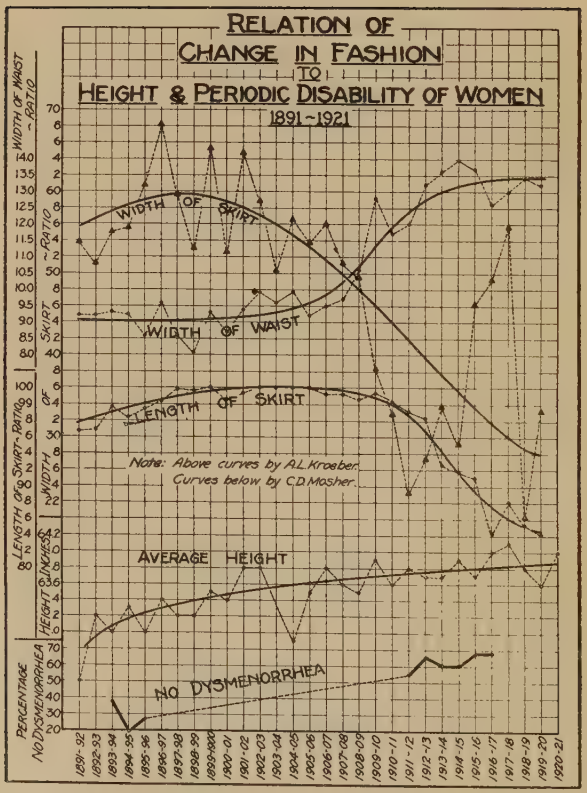
In the year 1894 in the group of college women studied,[8] there were 19 per cent who were free

[8] Mosher, Clelia Duel, "Some of the Causal Factors in the Increased Height of College Women," *Journal of the American Medical Association,* Vol. LXXXI, No. 7 (August 18, 1923), pp. 535–38; Kroeber, A. L., "On the Principle of Order in Civilization as Exemplified by

from pain at their menstrual periods, while in 1915 and 1916 the number of women entering the university who were free from pain had risen to 68 per cent. An extraordinarily close correlation was found between the fashion of dress and the menstrual condition of women. As the skirt grew shorter, narrower, and lighter in weight, and the waist grew larger, the functional health of women improved. This narrowing and shortening, which are advantageous to the health of women, of course do not include such vagaries of fashion as the excessively narrow skirt, which hinders freedom in walking, or the extremely short skirt, which may afford insufficient protection against the cold; these would be almost as unhygienic as the skirt of the earlier period with its extreme width and great weight.

We should rejoice in the freedom of the modern girl with her large normal waist. How attitudes have changed in regard to this size of waist is well illustrated by a recent incident. A mature shopper inquired of the saleswoman concerning a skirt which she saw in the store. "Oh, that is a small-sized waist; it is only twenty-eight inches," was the reply. The woman, commenting on the

Changes in Fashion," *American Anthropologist,* Vol. XXI (1919), pp. 235–63.



Courtesy of Journal of American Medical Association

change in size of waist from her day, said, "By chance a very light corset which I wore in 1902 was found in a trunk in the attic. My nineteen-year-old daughter tried it on and could not get it together within eight inches. My fourteen-year-old daughter has a waist nine inches larger than this corset."

Unfortunately the modern girl does not always avail herself of the hygienic privilege of being fashionably and conventionally dressed and at the same time of having an unconstricted waist. Even if she does not wear corsets, the elastic band of skirts or bloomers sometimes makes sufficient compression to leave a red line about her unprotected waist. This red line, of course, means interference with circulation, this compression being often sufficient to make the redness last for an hour or more after the compression has been removed. Not only have we here the undesirable effects of interference with circulation with all the train of evils already discussed, but another undesirable result follows: along the line of compression there comes the deposit of fat. Every woman is naturally eager to delay this fat deposit over the abdomen, which almost invariably comes with age in both men and women. That this condition is hastened by compression at the waist, a compres-

sion which, though often moderate in degree, is continuous, has been illustrated over and over again in the schematograms in our study of posture.[9]

The corset, which has been responsible for so much of the ill health of women in the past, has been in large measure discarded by this splendid modern girl; with her slender muscular body, strong abdominal muscles, she no more needs a corset than does her athletic brother. The corset[10] is a surgical appliance needed only by the average woman who is overfat or whose lack of muscular development makes necessary an artificial support. If a corset is worn, it should be worn in such a way that no compression at the waist occurs. No pressure which can make a red line above the crest of the pelvic bones should be permitted. This compression can often be avoided by the use of two or three strings in the corset. A

[9] Mosher, Clelia Duel, "The Schematogram; a New Method of Graphically Recording Posture and Changes in the Contours of the Body," *School and Society,* Vol. I, No. 18 (May 1, 1915), pp. 642–45. Also Posture League, 1 Madison Avenue, New York City.

[10] "Resolutions on Health Adopted by the First International Conference of Women Physicians," New York, 1919, *Proceedings,* Vol. I, p. 12; also "Discussion of Corsets and Gowns," p. 154.

loose corset frequently brings about serious compression; owing to the down pull of the stocking supporters, a loose corset has the smaller circumference of the corset pulled down to a point of larger girth of the body, bringing about a downward compression most disastrous to normal functioning as well as injurious to beauty of contour. If a corset is worn, it must be held firmly about the pelvic bones by the lowest string in the corset, thus insuring no slipping down of the corset, and must be loose enough above these bones to leave no red line at the unprotected waist.

The only other factor which is tolerably constant in the two groups of nineteenth- and twentieth-century girls previously compared, is that of exercise. A study of the relative amount of exercise of women before entering Vassar College[11] shows that in the earlier period 26.5 per cent of the women had no sports or athletic exercise before entering college, while in the later period only six-tenths of one per cent had no sports before admission to Vassar. There is no question that the greater activity of modern girls,

[11] Newcomer, Mabel, "The Physical Development of Vassar College Students, 1884–1921," *Quarterly Publication of the American Statistical Association,* December 1921.

made possible by lighter and looser clothing, has undoubtedly assisted to lessen the menstrual hemorrhage, its duration, and the associated pain.[12]

The modern college woman when questioned concerning her menstrual period, if she reports menstrual pain, often adds, "Yes, when I have pain, it comes when I have not exercised as much as usual." More often still, when questioned concerning this periodic function, she finds it difficult to give any definite answer as to how often her period comes or how long it lasts, for now it is the exceptional woman who has pain. This periodic function of menstruation makes no more impression on her mind than does that other periodic function, digestion. In both cases it is the departure from the normal conditions—the indigestion or the exceptional pain at menstruation—which makes so much impression. It is because she thinks we want her to report pain that she too often reports this exceptional condition rather than that which is usual; and in consequence our records are often unreliable and misrepresent actual facts.

[12] Mosher, Clelia Duel, "Some of the Causal Factors in the Increased Height of College Women," *Journal of the American Medical Association,* Vol. LXXXI, No. 7 (August 18, 1923), pp. 535–38.

Under normal conditions there should be no more women suffering with disorders of the generative organs than with disturbances of the digestion, respiration, or heart. Do not fail to keep in mind, however, that the statements made throughout this book refer only to normal healthy women, who constitute the greater portion of womankind, and do not apply to women who have organic disease.

The following conclusions regarding functional periodicity may be questioned and may even be apparently disproved by your own experience or possibly that of your acquaintances, but this does not alter the facts. So general is the belief in the incapacitating effect of this normal physiologic process that one of the United States, at least, is reported to have a law providing for a business woman's absence from work for a certain number of days each month. The possible repeal of this law, if women were given equal suffrage, was advanced as an argument by an anti-suffragist who genuinely believed in the necessity of a woman's being physically unfit to work two or three days in each month, although she, herself, found no necessity to alter her way of life from this cause. It is still very difficult for us to lend an open mind to any theory which opposes the

accepted one of inevitable menstrual disability among women.

The first step in the physical regeneration of women is to alter their habits of mind in regard to bodily functions. Many women still accept periodic disability as inevitable. The terms "sick time," "unwell," etc., for the function of menstruation, and the mental acceptance of disability are so firmly fixed in traditional thinking that it is difficult to get a woman even to try to be well, however simple the method of relief offered to her. One is so often met with such statements as: "I have so much less trouble than my friends that it does not seem worth bothering about"; or, "Everyone has more or less trouble"; or "I can't remember to do the exercises"; the implication always being that such trouble is inevitable to women.

The modern college woman when she does have any trouble has so little that she often will not make the slight effort to do these simple exercises to shorten the length of her period. One young woman under observation, however, gave this account of her experience:

"I had never had a period without terrible pain since I was 13 years old. I always went to bed, at least for the first day. My mother has taken me

to every kind of a doctor, even osteopath and chiropractor, and none of them did me any good. I didn't believe in your exercises, but after talking with you I did them for two weeks twice a day, and two or three days before my period, for three times a day. When I felt that it was coming on I did two hours of my classwork and telephoned my mother to have hot-water bottles and my bed ready when I should come home. I was so sure that I would have the customary pain that I lay down and waited for it to begin. But it did not begin. Then I got up and went out to gather some greens for decorations for a dance which was to be given that night. I fell over a fence and then I was sure I would have a terrible time. But as the pain still did not come on, I stayed around till dinner-time and afterward dressed and went to the party. On the second day I was on my feet all day and did much heavy lifting, so that I was very tired and felt a sense of weight (in the pelvis) but I had no pain, cramps, or any bad effects."

Together with this given freedom from disability comes the loss of a special pleasure, a fact which brings into notice a curious anomaly. Sometimes it seems that women turn from their relief and cling to this disability—especially when it is not very serious—for the sake of special privi-

leges which custom has decreed that it bring. A young college girl showed a decided reluctance to take the simple exercises prescribed by her physician to relieve the pain of her menstrual period. A little questioning brought out the fact that the day in bed once a month was an enjoyable luxury which she was loth to forego. "My mother has always stayed in bed every month and I mean to, too," she finally declared with some indignation. This frank confession expresses the unformulated feeling of too many women. Many use the opportunity of staying away from their usual occupations when absence is allowed because of the traditional incapacity of the menstruating woman. The number of these absences would be greatly decreased if women realized the economic handicap they are helping to perpetuate. Equal pay for women means equal work; unnecessary menstrual absences mean less than full work.

The economic loss to the woman who has to earn her living and is yet periodically more or less incapacitated, is very great; and even to the home-keeping woman the loss in time and working capacity is considerable. But these losses are relatively unimportant as compared with the inability of the periodically depleted woman to be a vigorous mother to the race.

The first remedy for periodic disability is the removal of the factors which are producing it—constrictive clothing and the inactivity of the muscles of the abdomen and the diaphragm. But more important even than this is an alteration of the morbid attitude of women themselves toward this function, and almost equally essential is a fundamental change in the habit of mind on our part as physicians; for do we not tend to translate too much the whole of a woman's life into terms of menstruation? This attitude is unfortunately not confined to the doctors. Not only Professor Sedgwick but too many other university teachers hold this traditional view. The falling off in mental alertness of the woman student is usually ascribed to the menstrual function; no account is taken of the excessive amount of social activity with the accompanying loss of sleep, a factor which is oftener the cause of the mental dulling on some particular day. If every young girl were taught that menstruation is not normally a "bad time," and that pain or incapacity at that period is as discreditable and unnecessary as bad breath due to decaying teeth, we might almost look for a revolution in the physical life of women.

Proper conditions of menstruation.—I have found three women whose menstrual flow did not

exceed a stain the size of a dollar. The first one, still an exceptionally vigorous woman at 60 or over, has borne eight perfect children and is a grandmother; the second, also an exceptionally vigorous woman, had three children and is a grandmother; the third bore two children. If this periodic loss of blood is not necessary to make a woman capable of child-bearing, we may well ask what purpose it does serve.

I believe the menstrual hemorrhage is Nature's effort to relieve the undue congestion of the uterus which has been induced (1) by the upright position and (2) by interference with the normal physiologic return of the blood to the heart which should be accomplished by the action of the diaphragm and the abdominal muscles. The undue congestion is most frequently the cause of pain at the beginning of the menstrual period, this pain disappearing as soon as the flow is well established, which relieves the undue congestion.

I believe that menstruation represents, not "a supplemental wave of nutrition"[13] but rather a waste of potential energy in the form of blood which might be used in productive work when not required for the development of the embryo. No

[13] Jacobi, Dr. Mary Putnam, *The Question of Rest for Women,* p. 168.

physiologic purpose is served by the excessive congestion of the uterus and adnexa so frequently found in women. No harm can possibly come from bringing about by the physiologic method here suggested a better circulation of the blood through the generative organs. The healthy functioning of any organ is dependent on perfect circulation which brings oxygen and nutritive material to its cells and carries away its waste products, not on being overfilled by a sluggish blood-flow. In this over-congestion, often unduly prolonged, have we not a condition favoring the development of pathologic (diseased) conditions?

At present all the evidence points to the menstrual hemorrhage as a secondary matter more or less fixed by the upright position. It is unnecessary and undesirable that it should be of more than brief duration or of more than slight amount. Pain and discomfort, where no organic lesion (disease) exists, are readily controllable by the physiologic regulation of the circulation from the abdomen and pelvis back to the heart, through the restoration of the tone and action of the diaphragm and also the abdominal muscles, which give proper support to the abdominal organs. The coincident functional disturbances in other organs are a result, directly or indirectly, of the undue

congestion in the pelvis which has drafted off too much blood from the general circulation, leaving other parts—such as the digestive area or skin—too depleted to function properly. The congestive headaches, whether they occur at the menstrual or the intermenstrual period, are often relieved through the equalizing of the circulation by these exercises, since we are only restoring normal circulation by the very method which Nature has provided—the full use of the diaphragm and abdominal muscles. There can be no danger in limiting a woman's period by the exercise here described. Moreover, may not this equalization of the circulation bring about more perfect working of the glands of internal secretion? This would account in a measure for the more perfect functioning of the woman when the menstrual period is short and without pain.

In an anemic woman, however, or a woman not otherwise in good health, a shortened period may be an indication of danger, and is a symptom to be dealt with by a well-trained physician, who will find the cause, and not simply give drugs to bring about the prolonged period and unnecessary loss to further deplete her.

Change of life.—Let us return for a moment to the climacteric, menopause, or change of life, re-

ferred to by the distinguished unnamed physiologist quoted by Professor Sedgwick, as "a critical period . . . . when mental disorders are apt to supervene, resulting in abnormal behavior." From girlhood to womanhood the attention is directed of necessity, but often unduly, to so obvious a function as the menstrual flow. From the moment a girl hears of it, she is taught, as we have seen, to regard it as a periodic illness. The terms "sick time," being "unwell," have long been grafted into our ordinary speech. The result upon the mind of constantly anticipated misery can scarcely be measured. Imagine what would be the effect on the function of digestion, if from childhood everyone were taught to refer to it as a sick time. After each meal every sensation would be exaggerated, and nervous dread would presently result in a real condition of nervous indigestion, a functional disturbance. It is said that it is possible to make a man ill by simply having a number of people tell him how ill he looks. Certainly, there is no disputing the fact that the mind has a powerful, if unconscious, control of organic processes. Now for generations, if we have taught girls anything at all in regard to menstruation, we have been instilling the idea that it is a periodic illness involving suffering and incapacity. Surely this is a very

potent factor in the emphasis and exaggeration of every sensation at this time. Further, from girlhood to middle age, women are brought up in anticipation of misery, for even the cessation of menstruation, the menopause, is regarded with apprehension. Ask any woman how she feels about the coming change of life, and she will too often tell you she looks forward to it with dread, expecting to be incapacitated or perhaps insane. Thus her own nervous anticipations tend to increase whatever incapacity she may have to suffer. Dr. Crile's work[14] (in connection with quite another subject) gives a possible physical basis for this statement. He has shown that emotions, such as fear and worry, bring about disintegrating changes not only in the nerve cells of the brain but also in certain other organs of the body. This may be also the explanation of other common observations in regard to menstruation, such as (1) dysmenorrhea on alternate months; (2) the disabilities which are ascribed to some indiscretion or exposure at a previous period, although no trouble resulted at the time.

While it is true that a certain number of women are incapacitated at the menopause, yet I do not

[14] Crile, G. W., and Lower, W. E., *Anochi-Association* (1915), pp. 56, 93.

hesitate to affirm that much of the incapacity of this period is unnecessary and avoidable. There is no occasion for a woman to dread this period unduly. Instead of morbid unhappiness, the climacteric or change of life should produce in the mind of a normal healthy woman no more than a mild regret that the period of youth and potential motherhood is over, and should be naturally welcomed as release from the inconvenience attendant upon menstruation. Much of the trouble is due (1) to a nervous letting go of the woman's self-control, and acceptance of the "inevitable incapacity"; (2) to her muscular inactivity; (3) to social and family changes as much as to physical causes. If the woman has been the mother of a family, her family has grown up, her period of financial stress and effort in helping to build up the family fortunes is over. If she has had intellectual interests earlier in life, too often she has dropped them. She is confronted with a loss of her usual occupations and an absence of all necessity to exert herself; and at the same time her attention is directed unduly to her physical discomforts, be they small or great, or be they only a mere physical consciousness of altering conditions. Her condition is almost exactly analogous to that of an active man who stops business in

middle life. Such a man often develops neurasthenic symptoms; Dr. Archibald Church[15] has called attention to the nervous and mental disturbances of the male climacteric. Why should we be surprised when a woman does the same, with even greater reason? Without absorbing occupation, without mental diversion, and encouraged by the sympathetic pity of her friends, she lets herself go to pieces nervously, and spends a period of years in wearing out her family and finding life not worth living.

Setting aside the women who have organic disease, what classes do we find escape the disturbances of the menopause and climacteric? The answer may be given without fear of contradiction: those who are busy and useful. The women who have absorbing occupations, who are vitally necessary in the world, are the ones who get through this period unharmed. A prominent woman physician in the eastern United States declared a few years ago that not a single woman physician of her acquaintance had gone to pieces at the change of life. Among a considerable num-

[15] Church, Dr. Archibald, "The Nervous and Mental Disturbances of the Male Climacteric," *Journal of the American Medical Association,* Vol. LV, No. 4 (July 23, 1910), pp. 301–3.

ber of women who are teachers or authors or (in some cases) have carried the burden of being the mother of a family while occupying a salaried position throughout the menopause, not one has had to quit work for this cause, while four have certified that the research work which has brought them distinction was done without any inconvenience whatever during the years of this functional change.

Whatever may be one's personal opinion of the advantages or disadvantages of woman's suffrage, it may be said that equal suffrage, like many of the economic and philanthropic opportunities now open to women, helps to meet this problem of the hygiene of middle life. During the years of a woman's necessary total absorption in her occupation of home-making and the bearing and rearing of her children, her intellectual occupations and interests outside of the home are laid aside. Where equal suffrage exists, civic matters become a topic of home discussion; they concern the mother and daughters as well as the father and sons. Thus a passive interest in politics is kept alive in the woman during her years of total absorption in her family and home. When the period of leisure arrives it is not necessary to try to manufacture an interest for the woman whose

occupation, as has been shown above, has in the normal course of events been taken away from her. Thus "votes for women" becomes not only a safeguard to the woman of middle age, a help in preserving the integrity of the family, but a protection to the community from the menace of the unoccupied middle-aged woman. It becomes economically an asset in the productive use of her force and intelligence, the waste of which too often results in doctor's bills, sanatorium treatment, or indulgence in dangerous fads.

Thus it would seem that many of the disabilities of menstruation and the change of life are due to removable and preventable causes.

CHAPTER III

HYGIENE AND HABITS

Causes and effects of constipation.—Let us now consider some other phases of woman's hygiene. Constipation may cause menstrual discomfort for anatomic as well as physiologic reasons. The lax abdominal muscles often permit the sagging of the abdominal organs and occasion consequent imperfect functioning. Constipation is often associated with bad skin conditions and paves the way for many physical derangements. It is frequently corrected by gradually drinking a glass of cold water before breakfast each morning and taking from eight to a dozen glasses of water during the day, not more than one at a time; by a regular and unhurried time for attention to this function of elimination; by regular and wholesome food, including more fruit in the diet, the use of bran bread, bran biscuits, or bran cookies which, when properly made, are very palatable as well as wholesome.[1] The diet too often fails to contain sufficient roughage because the woman does not care for the winter vegetables, such as turnips, carrots, parsnips, etc. One is apt to forget that our tastes are largely habits and may be ac-

[1] See Appendix for tested recipes.

quired. The tendency in both England and the United States is to eat too much meat, especially only the muscle cuts, too many potatoes, and far too little leafage, such as spinach, Brussels sprouts, cauliflower, uncooked cabbage, and lettuce. These leafy vegetables, supplemented with milk and eggs, will supply all of the vitamins needed by the body. Expensive patent medicines, even if they were able to accomplish a small part of their claims, cannot supply the body needs half so well as proper diet, which provides abundant vitamins without any extra cost. The claims made for the use of yeast as a source of necessary vitamins and as a cure for constipation is not substantiated, according to the investigations of McCollum and Simmons.[2] Cure your constipation by the simple and inexpensive methods of a regular hour for evacuation of the bowels, proper diet, sufficient exercise, and abundant water drinking. If this will not accomplish the result, go to a thoroughly trained physician, who will find out the cause of the constipation and try intelligently to remedy the condition. The elimination, by these means,

[2] McCollum, E. V., and Simmons, Nina, "The Potency of Commercial Vitamin Preparations," *Journal of the American Medical Association,* Vol. LXXVIII, No. 25 (June 24, 1922), pp. 1953–57.

of constipation as a factor in producing pain at the menstrual period, or the exercise of the abdominal muscles and the descent of the diaphragm through the massage of the intestines, corrects this undesirable condition by perfectly natural and physiologic methods, without resort to drugs or other undesirable means of elimination.

Water drinking and bathing.—The average woman needs more water inside and out. How many of my readers habitually drink from eight to twelve glasses of water a day? Yet insufficient water may be a cause of constipation, and furthermore, concentration of the urine may cause an irritable bladder which will require too frequent emptying, one of the reasons frequently given for the neglect of water drinking. The anatomic relation of the bladder to the uterus is an added danger in the neglect of this function. The average woman fails to drink enough water. The substitution of tea, coffee, and milk does not fully satisfy the needs of the body, and at least eight glasses of water should be drunk every day. Begin the day by drinking your first glass of water after you brush your teeth in the morning before breakfast. Modern studies have shown that a moderate amount of water with meals, if not used as a substitute for mastication, really aids diges-

tion. Someone has said that water should be taken at meals, but only taken when there is no food in the mouth. Thus, with an added habit of taking a drink of water every time you pass a faucet or drinking fountain, it becomes an easy matter to get the necessary eight to a dozen glasses each day. Try it and see if you do not feel better. Many a case of constipation has been improved and sometimes cured by the drinking of sufficient water.

The importance of bathing is also overlooked, especially at the menstrual period. Why should a woman alter all her habits of life so sharply at the time of menstruation? This alone is sufficient to account for many of her symptoms. At the time of her functional periodicity she needs more rather than less bathing, provided care is taken to prevent chilling of the surface, and provided she gradually accustoms herself, without fear or worry in regard to consequences, to rational bathing at this as well as other times. The average woman has been taught to have a phobia toward water at the menstrual period. The objection to bathing at the time of the periodic functioning is simply that, unless care is taken to prevent the chilling of the body and to secure a good reaction, so that the skin is in a glow, harm is done by

depleting the surface circulation, thus further increasing the blood supply of the already over-congested uterus; then the fear and worry lest she may take cold add to the harm. No more definite laws can be laid down for the frequency of bathing at the menstrual period than at any other time in the month. Then, as always, the rules in regard to bathing depend upon how the woman reacts to the particular kind and frequency of baths. Frequent bathing is not simply an aesthetic matter, as has been stated by some. The skin is one of the excretory organs, and the work done by the skin lessens just so much the demands on the kidneys.

Before I found the cause, for four years I had been observing the distribution of acne on the bodies of women who have imperfect skins. If pimples are present, they are usually in a triangular area on the chest, or across the shoulders, or on the back of the arms or legs. They may be in one or all of these localities. Have you ever considered that these are the places which receive less soaking in your tub baths? The triangular area on the chest is seldom covered with water, and the body usually rests against the tub on some or all of these other places. The correctness of my theoretical explanation has been proved in more than one

case where additional attention to the proper bathing of the affected parts corrected a condition not yielding to medical treatment with ointments.

Eating habits.—The importance of having growing girls well nourished, as a safeguard against nervous breakdowns in the future mothers at a later period of life, has been stressed by one of our leading physicians.[3] Proper diet and regular habits of eating are, however, important at any age; no engine can work without proper fuel.

The problem of injudicious dieting has reached alarming proportions. This is probably due to several causes.

1. Undue emphasis has been laid on slenderness as the most desirable type of beauty; and there is a prevalent belief that a social taboo is put on women who are not slender.

2. There have recently been endless articles in papers and magazines, often by reputable physicians as well as by quacks and faddists, giving diet lists and methods of reducing weight. Nowhere has the idea been emphasized that these diet

[3] Barker, Lewellys F., M.D., LL.D., "The Nature, Causes, and Prevention of 'Nervous Breakdowns.'" (Address delivered by invitation at the meeting of the Royal Canadian Institute, Toronto, January 10, 1925.)

lists and advice are intended for inactive, overfat middle-aged women, and not for vigorous, active human beings. When applied to growing girls they may be positively dangerous.

3. The very misleading tables of average weight and height, which do not take into consideration the four types of figure—the tall broad, the tall slender, the short broad, and the short slender—have been another cause of unwise dieting. The women make an effort to conform to the specified weight for a given height only.

A special study of the eating habits of the women at Stanford University[4] showed that the women enrolled in athletics, who are living under training rules which require regular hours of eating and sleeping, are universally in very much better condition than those whose habits are uncontrolled. A suitably varied diet has been briefly discussed under the heading "Constipation"; it is only necessary to add here that food should always be taken at regular intervals. Omission of meals, hurry in eating, or injudicious eating between times should be avoided. Experiment has shown that the taking of sweets too near meals slows digestion and dulls appetite; a sweet des-

[4] Report of the Medical Adviser of Women, *Annual Report of the President of Stanford University,* 1924–25.

sert, however, is essential to give the body a sense of having its needs fully supplied.

Fatigue and sleep.—Dr. Hodge[5] has shown that there is an actual using up of the cell substance in the brains of bees and swallows during the day's activities. The exhausted cells, rested and fed, were seen to return to apparently normal condition. I take it that these studies suggest what proper periods of rest and proper food, alternated with suitable activity, may do for woman. This wonderful modern woman with her perfectly working body and superb health is intoxicated with her freedom and fills her life with incessant activity. In her desire not to miss anything, she burns the candle at both ends, cutting short her sleep and hurrying with her meals, or often omitting them altogether. This increasing of the periods of activity means simply taking away the time needed to repair and rebuild the used-up cell substance, to keep the body working at maximum efficiency with the minimum of wear. The modern girl wants a short but rich life. As one of them

[5] Hodge, C. F., "A Microscopical Study of Changes Due to Functional Activity in Nerve Cells," *Journal of Morphology,* Vol. VII, No. 2 (1892). See also "A Microscopical Study of the Nerve Cells During Electrical Stimulation," *ibid.,* Vol. IX, No. 3 (1894).

said, "I don't want to live to be old, but to live to the full and then be through." Unfortunately this disregard of the need which the body has for periods of rest alternated with periods of worth-while activity does not kill, but recruits that army of semi-invalid, middle-aged women who fill the doctors' offices and the sanitariums, and are often the despair of the physician who is confronted with a problem, the solution of which should have been found ten years before it was presented to him—a question of prevention rather than cure.

The problem of sleep and the problem of health are too closely interwoven to be separated. To miss a couple of hours of sleep at night does not mean much in the mind of the average young woman. But sleeping on the average of seven hours a night means the loss of fourteen hours of sleep each week—the equivalent of about one and a half sleepless nights per week, six sleepless nights a month, and 72 sleepless nights a year—an average of almost two months and a half of sleepless nights per year! One begins to realize the handicap to the growing girl; for not only must she rebuild and repair what has been used in her overactive day, but she is still building her body; we are too apt to forget that even the bones are not completely ossified until about the twenty-

fifth year. So the young woman who wishes to live to the full and miss nothing in her great opportunities, will further her desires by attention to these rather stupid everyday habits of proper elimination, bathing, drinking eight to a dozen glasses of water a day, regular eating of a balanced ration, and sleeping nine hours each night. Attention to these habits will, moreover, prolong the period of youth; life may thus still be an adventure at the time when the women of the older generation had retired to the chimney corner, onlookers at the game of life instead of active participants. On the other hand, disregard of these regular habits means ultimately, for the woman who habitually ignores them, nervous bankruptcy.

Mental habits and attitudes.—In our discussion of menstruation we have already referred to the subject of attitudes and the disastrous part they have played in preventing the woman's freedom—the doctor's and teacher's attitude of always considering a woman's life in terms of menstruation; the woman's own attitude toward this normal physiologic function, calling it "a sick time" and accepting the idea of incapacity and rest in bed as necessary; woman's phobia toward water which prevents the necessary bathing during menstrua-

tion. Every woman should cultivate the habit of thinking in terms of health; she should discard from her vocabulary the expressions "sick time," "unwell," to designate the periodic function of menstruation. Being a woman is no reason for not being perfectly well. She should avoid patent medicines and cure-all devices which are sold for the benefit of the seller and not the buyer.[6]

We have already seen that we write in our bodies the record of simple muscular movements —posture, facial expression; our efficiency and perfect functioning are directly influenced by the results of simple everyday muscular movements. In the same way our nervous systems are influenced by the simple response to nervous stimuli. These repeated responses to given nervous stimuli are recorded in the formation of habits, paths of least resistance along which the impulse most readily travels, and attitudes which are the record of repeated response. An interesting illustration of this fact may be found in the attitude toward prohibition in a country where it is a law of the land.

[6] Fishbein, Morris, M.D., *Medical Follies,* Boni & Liveright, New York, 1925; and *The New Medical Follies,* Boni & Liveright, New York, 1927; Adams, S. H., *The Great American Fraud,* The American Medical Association, 535 N. Dearborn Street, Chicago.

We may define law as the result of foregoing certain individual liberties in order to make possible community living. It substitutes for force —the law of the jungle—the larger freedom of civilization. Thus, no matter what may be the American's attitude toward prohibition in the United States, for instance—whether he approves of it in its present form, believes it should be modified, or believes it should be repealed—it is nevertheless the law of the land. Each time he breaks this law, he is sending a stimulus to his nervous system, developing a path of least resistance, establishing a habit of law-breaking, an attitude of toleration toward lawlessness. We are in large measure the result of inherited potentialities developed by our selection of stimuli. What we are, or what we do, is not confined to ourselves, for "no man liveth unto himself." Carry this fact of the formation of habits and attitudes a little farther. The constant repetition of stimuli applied to children and young people—not only in lawlessness in regard to alcohol but in the reading of books glorifying this same disintegrating attitude, in the motion pictures, in the colored supplements of the Sunday newspapers in the United States—is the repetition of such stimuli applied at a period of life when the response is greatest

and the background for choice least developed. Is it any wonder that the wave of crime due to the young law-breaker is increased?

Apply this study of the cause of habit and formation of attitudes still further. The constant dwelling on the subject of vagaries of sex behaviour, developed *ad nauseam* in the sex novel and obscene pictures, touches on what is at least a possible source of deterioration. Add to this that among modern boys and girls—young men and young women—a larger percentage than ever before are perfect physical specimens in whom the sex urge is more than ever to be reckoned with. Here we have the danger and the possible cure: for physical activity which helps to develop the perfectly functioning body also helps to govern it by a clean, perfectly functioning mind. This primal force should be, when not needed for reproduction, converted into some form of creative work. The cultivation of wholesome, worth-while occupations increases the number of avenues for the expenditure of this vital power. Thus are produced the ideally productive man and woman—the foundation of a successful democracy.

There is food for thought in the college mother's lament: "I can train my daughters to be safe from the danger of the overemphasis of sex in

the motion pictures, but how can I protect them from the deterioration of their taste by the constant looking at such hopeless vulgarity?"—another example of the development of attitude as a recurring response to the same stimulus. The growing tendency of the best motion pictures away from these objectionable features promises in the future that this legitimate form of entertainment will be free from these undesirable stimuli.

Life is a series of choices. The wholesome woman will select the stimuli to which she will respond, so as to ensure the development of a sane attitude toward life and its problems.

CHAPTER IV

HEALTH AND BEAUTY

Care of the Feet.—We hear constantly of defective feet, particularly of feet having broken arches, and we go to get supports without inquiring why this degenerative change is so rapidly increasing. Yet the answer is not far to seek. We distort our feet quite as much as the Chinese did with binding the feet of their women; ours is another but not less a distortion, and we do it with less reason. The Chinese at least were convinced that women, owing to the enforced inactivity resulting from their deformed feet, would remain more pliable and therefore bear their children with greater ease, have less difficulty in childbirth—in other words, have their racial efficiency increased. There are among us also still a few who hold the false doctrine that the undeveloped and weak woman is, from the racial point of view, more able; but this has many times been disproved. Can we expect the foot, so similar in structure to the hand, not to feel the evil effects of being strapped to an unyielding support in an abnormal position so that its muscles can never be properly exercised? Should we wonder that ligaments and unused muscles fail to keep the foot in a normal

condition? The unhygienic practice of putting children in sandals having rigid, unyielding soles begins the trouble, and, by preventing the action of the foot muscles, lays the foundation for the abnormal feet so deplorably frequent in adult life among both men and women. Flexible soles in sandals or moccasins which allow use of the muscles of the feet in childhood, and shoes with flexible shanks and cut on correct lines in adult life, will go far toward bringing back the normal foot.

Can you expect a good walk or a fine carriage of the body supported by such feet as fashion has developed for the average woman? Never did I fully realize what a truly fine carriage and the beauty of a good walk could mean, nor how far we had departed from even their semblance, until I saw Mrs. Diana Watts[1] in her demonstrations of Greek statuary. She makes the Greek ideal of physical perfection practical and attainable. Whether one agrees with her theories or not, the demonstrations are invaluable in leading one to appreciate the possibilities for grace and beauty in a symmetrically developed woman in whom poise, balance, and graceful posture are, in part at

[1] Watts, Diana, *The Renaissance of the Greek Ideal.* London: W. Heineman, 1914.

least, dependent on good feet. Such an ocular proof of what the old Greek theory would mean, applied to the modern woman, might awaken a new enthusiasm for her attainable physical ideal.

Sometimes apparently flat feet are functionally good; a real danger exists in overstressing the idea of necessary abnormality in the low arch. Such feet may function more perfectly than those of the woman whose high arch has been so constantly supported in her Louis Quinze shoes that the foot has lost its power of proper activity, or is unable to stand the strain of prolonged use. The reason so often given for wearing the dangerous high heels—that the arch is high, making the high heel necessary—is not valid. One might question where the idea of beauty became associated with the high heel, which in its origin was only to make a short king of France look taller.

A study made by Mosher and Martin[2] throws some light on one aspect of the bad condition often found in modern feet. The effect of differences in use was especially well illustrated in a considera-

[2] Mosher, Clelia Duel, and Martin, Ernest G., "The Muscular Strength of College Women with Some Consideration of Its Distribution" (preliminary paper), *Journal of the American Medical Association,* Vol. LXX (January 19, 1918), pp. 140–42.

tion of dorsal flexion (bending up the foot at the ankle). Children between 5 and 16 years of age show the greatest dorsal flexion, women next, and men least in proportion to their total strength. Strapping the foot to the stiff, unyielding sole of modern shoes might account for the falling off in power of these muscles in the adult. That women have considerably more power than men may be due to the fact that they are more commonly trained in dancing, as was the case in the group of college women as compared with the college men.

This brings us to a question of how we shall deal with the lack of development and power in the modern foot. Would it not be worth while to use special exercises to develop, strengthen, and restore proper function to the muscles of the foot? Are such exercises not quite as universally needed as is work to strengthen the muscles of the trunk after removal of the corset? These exercises should be done in some sort of flexible foot-wear, or better still, without any foot-covering, if we could be sure to protect the feet from injury. Such exercises may be learned in any good gymnasium.

In changing from the high-heeled shoes (which necessitate an abnormal position and use of the muscles, bones, and ligaments) it is very essential

that assistance be given by special foot exercises to strengthen the weak parts and help over the transition from the abnormal to the normal condition, else the woman may be obliged to seek professional aid, and may be truthfully told that the pain she feels is due to the common-sense shoe—yes, a common-sense shoe, but put on without any common sense used in the method of application.

To convince yourself of how much you are injuring your feet by undesirable shoes you are wearing, try the following exercise: Walk across the floor three times in your bare feet. With the weight on the forward foot which rests on a sheet of paper, have the outline of the foot made with a vertically held pencil. Outline your shoe in the same way. Cut out both outlines and superimpose the shoe outline on the outline of the foot. You may then be able to answer the following questions: Does the shape of the shoe conform to the shape of the foot? Is the shoe narrow at the heel and broad at the toe as is the normal foot? If you wear pointed-toed shoes, are they long enough to prevent the forcing of the great toe toward the middle line of the foot (which favors the development of bunions)? Is there a crowding of the little toe toward the middle line (which usually develops a corn on this toe)? To study the

arches of the foot, wet the foot and walk across the floor. A normal foot will record the heel, the ball of the foot, the toes, and the outer edge of the foot, but will never make a complete outline.

A good shoe has a straight line on the inner edge of the sole on the great toe side of the foot, a broad, low heel, and a flexible shank. The support of the instep by a steel in the shank is as irrational as would be the support of the body by a corset in a normal athletic girl. Not only should the woman wear sensible and properly cut shoes, but she should also conserve her feet by walking with the toes straight ahead. The old teaching to toe out at an angle of forty-five degrees hastened for many women the breaking down of the arches. The United States Army now trains its men to the straight-ahead position of the feet in walking.

This is not to say, however, that there can be any fixed rule for walking, since recent studies tend to show that gait is more or less an individual matter. An interesting study of the gait of 150 college women made by Mrs. Patek in the Department of Anatomy of Stanford University has just come to my attention as this volume goes to press.[3] Among

[3] Patek, Sadie D., "The Angle of Gait in Women," *American Journal of Physical Anthropology,* Vol. IX, No. 3 (July–September, 1926), pp. 273–91.

many interesting points, the most pertinent to the present discussion were these: the average angle of gait was found to be 6°8; . . . . "the high arch is not necessarily strong nor a low arch weak"; . . . . "that we are not apt to habitually walk the way we are told to, but as anatomical or other factors determine"; . . . . "the angle probably is influenced by various factors such as heredity, age, and to some extent also by weight and height. Length of foot, width of pelvis, torsion, the collo-diaphysical angle, and previous habits of life and activity may also influence it." Mrs. Patek's findings confirm Dugan's[4] observations on college men and high-school boys.

When standing, keep the toes straight ahead, grip with the toes and throw the weight on the outside of the feet; this will prove an invaluable foot exercise. It will not only help to correct foot defects but it will safeguard the integrity of the feet by preventing the rolling in of the foot which throws the weight where it does not belong.

Condition and care of the breasts.—Certain problems of health are presented in the proper care of the breast. The normal position of the

[4] Dugan, Stanley, "The Angle of Gait," *Proceedings of the American Association of Anatomists, in Anatomical Record,* Vol. 25, No. 3 (1923); *Journal of Physical Anthropology,* Vol. 7 (1924).

breast is on the lateral aspect of the chest with the nipple pointing out. The breasts in the Venus de Milo and the Venus of Cyrene (see frontispiece) are perfect rounds and in normal position. In this position the breast is inconspicuous. Let the breasts be pushed toward the middle line of the body by an improper brassière, and they at once become conspicuous. Too often we find the breast pushed down by the dragging motion of putting on this garment. These improperly fashioned and improperly worn brassières are often responsible for the great number of pendulous breasts found among otherwise perfect modern women. The breast should always be replaced in proper position inside of the brassière after it is put on. In swimming, the breast should be carefully replaced in the normal position inside the swimming suit and the exercise taken with the breast in that position. The care with which we have shielded women from development of the pectoral muscles, on which the breasts are situated, is in part responsible for this degenerative change, rather than the absence of the support of the corset. Nor can we blame the woman altogether for her attitude of wanting to get the breast out of sight following the demand of fashion for a flat body. The trouble in the falling of the breast

begins with a loss in weight—a reduction in the fat in the breast; the girl who is active continues the dragging down of the breast with her brassière; the jolting by the automobile of the already slightly pendant organ continues the trouble; the girl's running and other violent exercise while the breast is relaxed by the loss of fatty tissue whips the breast lower and lower. Is it a wonder that the young woman regards this organ as simply a nuisance to be put out of sight in the easiest fashion she can find? Although these pendulous breasts sometimes function apparently as well as the breast in proper position, there is here another danger. Not only do the rubber brassière and bust reducer produce trouble, but the constriction of the too-tight brassière or of the ribbons in brassière or chemise may affect the chest and upper part of the breast so as to interfere with the circulation. The enlarged and conspicuous veins, the splotched-out aureola, and reddened skin of the breast, all are evidences of this interference with circulation. The result of this constriction is an increased size of the breast by the undue deposit of fat, aggravating the condition by the very method the girl has taken to make the breast smaller. Here we have another instance of the resulting deposit of fat along the line of constric-

tion following the interference with circulation. "A high degree of muscular power in a woman in no way lessens her racial efficiency. Lack of muscular power as in the pectoral muscles, on which the breasts are situated, may be a distinct racial disability."[5]

To follow the prevailing mode, the girl, in her effort to make her body appear flat—the momentary fashionable idea of beauty—has too often sought to achieve the figure of a man. If a woman is suitably dressed without sex appeal, the breast, even when large and well developed, is, in normal condition and perfectly natural position, inconspicuous. It is the large, flabby breast, pushed out toward the median line from its normal position on the lateral aspect of the chest, that becomes prominent. To conceal this pendulous breast, which is unsupported on strong pectoral muscles, and which the girl by her ignorant treatment is injuring, she then adopts the brassière. The brassière today is doing almost as much damage as did the corset in the earlier period. There is, so far

[5]Mosher and Martin, "The Muscular Strength of College Women" (*cit. supra*), and Mosher, Clelia Duel, "The Strength of Women," *Proceedings of the First International Conference of Women Physicians,* Vol. I (1919), p. 160.

as I know, no good brassière on the market. Therefore, the girl puts on the model available, dragging down the breast each time and strapping it firmly against the body wall. The result of these two factors, the flabbiness and the treatment, brings to the examining room far too many young girls with breasts hanging, in some cases so low that the nipple is at the waist line. Dr. Eliza M. Mosher suggests, "The condensation of connective tissue which occurs under the continuous downward drag of these pendulous breasts may favor the development of malignant disease in later life." Thus the girl, by lack of care, may be robbing her future, denying herself one of the joys and privileges of motherhood. The racial importance of perfectly functioning breasts cannot be overestimated. Too many women are unable or unwilling to nourish their babies. They have not been taught how greatly nursing the baby lessens the work of the mother, eliminates the problem of finding and preparing suitable food, gives the baby a better start in life, and reduces nerve strain for both mother and child; for a well baby is never a troublesome baby. Then too it is said that the pulling at the breast[6] hastens the invo-

[6] Williams, J. Whitridge, *Obstetrics,* p. 321. New York: D. Appleton & Co., 1st ed., 1903.

lution of the uterus and the return of the woman's figure to the normal. The confinement of the mother to the rigid schedule of a baby's feeding time is easily and desirably lessened by the introduction of one bottle a day, a substitution which makes it possible for the mother to be away from the child for several hours, and simplifies the problem of weaning.

Posture.—The drooping heads, the flat chests, the winged scapulae (shoulder-blades), the prominent abdomen go with inefficiency and weakness. Good posture is not only an asset on the health side, but is also an asset on the side of beauty. The tall girl who tries to make herself look short by bad posture does not succeed. She is less attractive because of her drooping head, flattened chest, round shoulders. She may escape the true valuation of her looks while her transient, youthful sparkle and coloring last, but she will soon reach that period when carriage, personal charm, good character, the only things that last beyond first youth, will determine whether she is classed as attractive or plain.

Bad posture is due in the majority of cases to simple everyday habits. We write into our bodies the record of simple muscular movements repeated over and over again. The uneven shoulders and

uneven hips are nothing but the record of books or bundles always carried in one arm. The flat chests are the visible story, not only of the vain effort of the tall girl to look short, but of endless knitting, sewing, and embroidering in a relaxed position, or of leaning forward on the elbows. With this undue stretching or lengthening of the muscles of the shoulders comes a corresponding contraction and shortening of the muscles on the front of the body. The ugly hollows above and below the collar bones and in front of the shoulders are not due to lack of fat only, but to these habit postures, caused by repeated muscular contractions until any other postures seem abnormal and unnatural. One favorite position of the body, with hands on hips, thrusts forward the abdomen into undue prominence. Sitting on one foot, standing with weight on one foot, uses one set of muscles, while the corresponding set on the other side are relaxed. So the unlovely asymmetry of the body is developed which each year will detract more and more from the woman's good looks.

The remedy lies within the reach of any woman who even once sees herself as she really looks. The next step is the study of herself to discover just what the habits are which are producing the deformity. It is easy to shift the books or burden

to the other arm; a good position with head up, abdomen back, weight on both feet, filling chest while in this good position up to the very top, while the weight is on the front of the feet, will help to fill out the undesirable hollows. Try it in front of the glass, and if you can't succeed by yourself, find some help from the nearest gymnasium to get you started. In the end it will be the woman herself who will have to make the change, a result of unceasing remembering, until the correct posture and good carriage which add so much to her good appearance have come to be the natural and unconscious action of the muscles. The weak shoulder girdle already referred to by Professor Sedgwick is in large measure a habit defect. Nothing in the ordinary life of a woman brings about much use of the arms even shoulder high.

There is no structural difference which would prevent the same activities and use in this part of the body in the two sexes. The modern athletic woman demonstrates this every day. If the woman is to use the opportunities for self-development, interesting and worth-while living, service to the race, economic and civic—in other words, to have the life crowded full of things worth having, she must be physically equal to the rich and varied life

which is open to her. Sound health and physical perfection are therefore first requisites, not only for college women but for all women. This perfection for a woman certainly includes the desired breadth of pelvis, but does not necessitate "narrow round shoulders" as stated by Professor Sedgwick. The study of the Greek models does not show weakness in the shoulder of the Venus de Milo nor of the equally beautiful Venus of Cyrene, recently unearthed and taken to Rome. We must go back to the old Greek ideal of physical perfection, and not be content with the changing models of fashion makers, whose interest lies not in beauty or efficiency, but in creating a demand for the goods manufactured to sell.

It is rumored that fashion again is seeking to exploit the unthinking woman. Will she give up the freedom allowed her by skirts of reasonable length, width, and weight—the health permitted her by absence of a corset, which allows a normal waist? Will she accept the revival of ideals of the degenerate period of Catherine de Medici with her steel corsets, and, again loading the tortured waist with the weight of many pounds of skirts, give up the exercise and normal activities which make for real beauty, wholesomeness, and efficiency in the mother of the race?

The woman who is not well should study her dress in relation to her body; her habits of eating, water drinking, sleeping, elimination; her exercise and bathing; and make sure she gets sufficient fresh air. She should apply the same common sense to the correction of any wrong condition that she does to her business in life. She should not alter her habits too violently but gradually accustom herself to a more hygienic way of living. If she needs medicine or advice, she should go to the best physicians she can find; they never advertise. She should avoid the followers of the endless cults, who without training can glibly assure her of a cure for anything and everything without any expenditure on her part but a sufficient sum of money. Finally, she should do the exercises described in the earlier pages faithfully every day in the month, including the days of menstruation, and see if she cannot join the great and growing army of women who are perfectly well, and who recognize that being a woman is not a handicap.

CHAPTER V

THE REWARDS OF PHYSICAL FITNESS

. . . . "All good things
Are ours, nor soul helps flesh more, now, than flesh helps soul." —Robert Browning, "Rabbi Ben Ezra."

Physical fitness is not only an individual, a national, but a racial obligation. How well are we women meeting this obligation? Health is the birthright of every woman as well as every man; but until we rid ourselves of some of the hampering traditions in regard to women, the average woman will not attain this birthright, and not only the individual and the nation, but the race will be robbed of its due.

Consider for a moment the handicaps which limit the achievements of women. All women may be divided into two classes: those who have private fortunes and those who when they work are dependent on what they earn for their living. It is with the latter class that we must deal in considering all questions of the economic life of women. The women of the former class may possibly be able to buy to a certain extent the service, the protection from the wearing details of everyday life, which are voluntarily given to the average man by a devoted wife.

It is not easy for any woman to deny herself the color and joy of life as expressed in dainty clothes, the comfort of being inconspicuous bestowed by conforming to the prevailing mode. And yet to satisfy this demand means, to more than one class of wage-earning women, distinct sacrifice. Perhaps the most conspicuous is the sacrifice which must be made by the woman who has the capacity for creative work in science, in literature, or in art, if she must conform to the accepted standard of dress and living. But even those who have not the ability to add to the world's thought or art are prevented from using their leisure for mental or spiritual development and they have not left even the time for worth-while things. More than one woman has sacrificed her normal and legitimate desires in regard to dress to attain that priceless leisure to devote her time and thought to some vital subject. Although it is not right that such payment should be exacted in this age of freedom, the fact remains that a wage-earning woman who has no private fortune, if she give the world the results of her study, must consider the cost in both money and time of the prevailing styles of dress. It is here that the differences between men and women and the inequality of opportunity still remain. Man's dress

has become standardized, and although in comfort, health, and beauty it leaves much to be desired, yet because it is standardized, it is less expensive in its first cost, less expensive to keep in order. Look at the laundry list alone and compare prices of laundering men's and women's clothes.

The suggestion of any form of uniform dress for women is invariably met by its opponents with the cry: "Would you eliminate all beauty from the world?" In this objection the contention is always made that the fashionable attire of women is beautiful. But is dress really beautiful which is often unhygienic, economically wasteful both of time and money? That woman's effort is made at such cost of both time and money is one of the factors in the small showing made by women in adding to knowledge which would put into the first class of human endeavor a proportionate number of women. As yet we do not know what are the mental abilities of women; nor shall we know until the bogie of "a world in blue serge" ceases to be a synonym for every attempt to lessen the demands of fashion on women. How can we have any women really pre-eminent in any field of endeavor so long as they are slaves to the changing mode? So long as woman does not free

herself from this tyranny, she must continue, unless she luckily possesses a private fortune, to be her own tailor, her own dressmaker, her own milliner, and, if she will continue to wear the dainty fragile things she now affects, she must also continue to be her own laundress. We may as well face the fact that so long as fashions so frequently change, and novelty, not service, is the demand, this waste, not only of money, but even more precious, of time, will steal from the productivity of the woman. Miss Harkness several years ago in the *Atlantic Monthly* pointed out that "every woman her own tailor was a thing to be ashamed of, not a matter of pride." Nor can we expect to have the best physical conditions in woman so long as she spends her leisure time making tatting to decorate her clothes or knitting or embroidering while her brother is playing ball.

Women no longer write the Spencerian hand with its deliberate and ornamental curves, marry at seventeen, are grandmothers by the time they are 36, assume cap and take to knitting by the fire, where with leisurely serenity they may contemplate the stage-coach progress of the world and shape the pattern of life for their docile granddaughters, who with breathless interest sit at their knees to learn. The position of women has changed

since the time of the early woman writer[1] who concealed her writing when visitors came because it was so unwomanly, or since George Eliot's lament, "You may try, but you can never imagine what it is to have a man's force of genius in you, and yet to suffer the slavery of being a girl."[2]

The splendid modern woman, with her sound and perfectly functioning body, her trained mind, is beginning to have the freedom to express her genius in whatsoever form she chooses. She does not recognize that being a woman is a handicap unless she is made conscious of some of the economic barriers raised against her by the traditional view of her weakness and incapacity.[3]

The woman of tomorrow will pay for her still greater freedom by greater obligations of service, demands which we of today may not even imagine. Born into a world of unlimited opportunity, the woman of the rising generation will answer the question of what woman's real capacities are. What are her handicaps? What are her abilities? She will measure up against the men of her generation and be weighed in the balance of equal

[1] Jane Austen; see *Notable Women in History,* by Willis J. Abbot, p. 369.

[2] *Daniel Deronda,* Book 7, chap. 2.

[3] *Ancilla's Share.* London: Hutchinson & Co., 1924.

opportunity. She will have physical, economic, racial, and civic freedom. What will she do with it?

Today woman is offered unlimited freedom, unhampered by any tyranny except the tyranny of fashion, which rests with her alone to remove. The college woman has chosen, and is today an inch and two-tenths taller than she was thirty years ago, free from periodic incapacity, fit for any work at any time. Too many times she is unjustly characterized as failing in her racial duty. The birth-rate of college mothers too often is compared with the birth-rate of the general population. A study of the college woman compared with the non-college woman of her own class yields some interesting results.[4] She marries two years later than her sisters, cousins, and friends who do not go to college, bears a slightly larger number of children per year of married life, and happens to have—though this of course is in no way an effect of her college training—a slightly larger percentage of male children. An English schoolmistress is quoted as saying that athletic women bear only girl children, or if they do have sons that the boys

[4] Smith, Mary Roberts, "Statistics of College and Non-College Women," *Quarterly Publications of the American Statistical Association,* Vol. VII (March–June, 1900), n.s., pp. 1–26.

are inferior. This statement that women could influence the germ plasm by anything they did was received with laughter by the student of genetics. Nor would such a statement be worth even passing notice if it had not received such wide publicity both in England and America. Here again the record of the college women, who bore more sons (55 per cent) than did their non-college sisters, cousins, or friends (47.7 per cent), shows the untruth in the statement of the schoolmistress, for the college woman is unquestionably more athletic than is the non-college woman.

We have referred to the Greek ideal of physical perfection and to the beautiful examples in ancient art represented by the Venus de Milo and the Venus of Cyrene.[5] Some further consideration of the Venus of Cyrene which may be studied in the excellent reproduction in the frontispiece may be profitable at this point.

The Venus of Cyrene, which was discovered in December 1913 on the site of the old Greek city of Cyrene in Lybia, Northern Africa, is ranked with the Cnidian Venus of Praxiteles and the Venus de Milo. It is of Greek marble, and it may be a Greek model of the fourth or fifth century B.C., or a good Roman copy of such a work. D. M. R. writ-

[5] See pp. 62, 68, and 75.

ing in *Art and Archaeology,* says: "There is so much life in the Cyrene Venus and the marble is so much like real flesh that one can almost see the muscles under the epidermis. It is this miracle of form which makes it possible that this is an original Greek work despite the large and rather ugly feet."[6]

One may raise the question whether the feet are unduly "large and rather ugly." I have no memory of thinking so when I saw this beautiful statue in the National Museum in Rome, nor does the Alinari photograph of the original statue, from which the frontispiece in this volume was made, show that the feet are ugly and too large. Certainly they do not resemble the modern feet, but we cannot therefore condemn them as unlovely. The modern foot, encased in its leather shoe has no fat on it below the line of compression, and our eyes are accustomed to this abnormally slender foot; but we do not call the baby's foot ugly, with its arch filled with fat; why should we call the feet of this Venus with their low arches, strong muscles, and rounded contours ugly? Are we not in such criticism substituting what we are accustomed to see for the really beautiful? If the ques-

[6] D. M. R., "Recent Discoveries at Cyrene," in *Art and Archaeology,* Vol. I (March 1915), p. 214.

tion of whether this beautiful Cyrenian Venus is of Greek origin rests solely on the contours of the feet, it would seem possible, from their beautiful unspoiled condition, to accept this as the work of a Greek artist, accustomed to see the human foot in its natural state.

The modern college woman, with her physical activity made possible by her unconstricting dress, is a much more normal and beautiful human being than the woman of the Victorian period. Not infrequently one sees in the examining room figures quite as beautiful as this Cyrenian Venus. Here too, the criticism of this modern woman is the fact that she has ugly feet, the result of distortions brought about by the modern shoe.

As far as I know this statue is the only woman's figure in ancient art to show what Ernst Brücke[7] calls the pelvic line, which in an exaggerated and often ugly form is common in the ancient statues of athletic men, especially in the figure of Hercules. It is the line which follows from the anterior-superior spine of the ilium to the top of the pubic bone, and then back to the anterior-superior spine of the ilium on the opposite side. One occasionally sees this line, which is associated

[7] Brücke, Ernst, "Schönheit und Fehler der menschlichen Gestalt." Wien: W. Braumüller, 1891.

with a firm abdominal wall and strong abdominal muscles, in a well-developed modern woman.

This admirable woman of today, approaching the old Greek ideal of physical perfection, is the mother of finer sons and daughters, the promise of a stronger race. This same achievement is now possible to all women. In the municipal playgrounds, swimming pools, gymnasia, and girl scout activities, woman today has such an opportunity as was never before given. It rests alone with her, whether she rejects it, clinging to the old ideal of physical weakness and dependence, or with open mind takes the opportunity of tasting the richness of physical perfection and the fullness of life which comes in its train, making of herself a better citizen, a better wife, a better mother.

APPENDIX

TESTED RECIPES FOR BRAN FOODS

We have discussed the desirability of introducing into the diet bran bread, bran biscuits, or bran cookies as an aid in the correction of constipation (p. 47). The recipes here given have been tried and found both palatable and wholesome.

BRAN BREAD

½ cup sugar
2 teaspoonfuls maple syrup
1 teaspoonful salt (rounded)
2 cups milk
2 cups coarse bran
2 cups white flour
4 teaspoonfuls baking powder

Let batter stand in baking pans ½ hour. Then bake in moderate oven one hour. 1 cup chopped walnuts may be added if desired.

TEN BRAN BISCUITS

1 egg
3 tablespoonfuls New Orleans molasses
1 cup sweet or sour milk
1 cup white flour sifted twice with
1 level teaspoonful soda
2 cups coarse bran
1½ tablespoonfuls melted butter

Mix in the order given and bake in gem pans in a moderate oven, twenty minutes or until thoroughly baked.

BRAN COOKIES

½ cup butter or lard
1 cup sugar
¾ cup sour milk or cream
1 small teaspoonful soda
2 cups coarse bran
2 cups flour
¼ teaspoonful salt
1 teaspoonful flavoring

Drop on buttered pan or spread in a thin sheet. Bake in a moderate oven.

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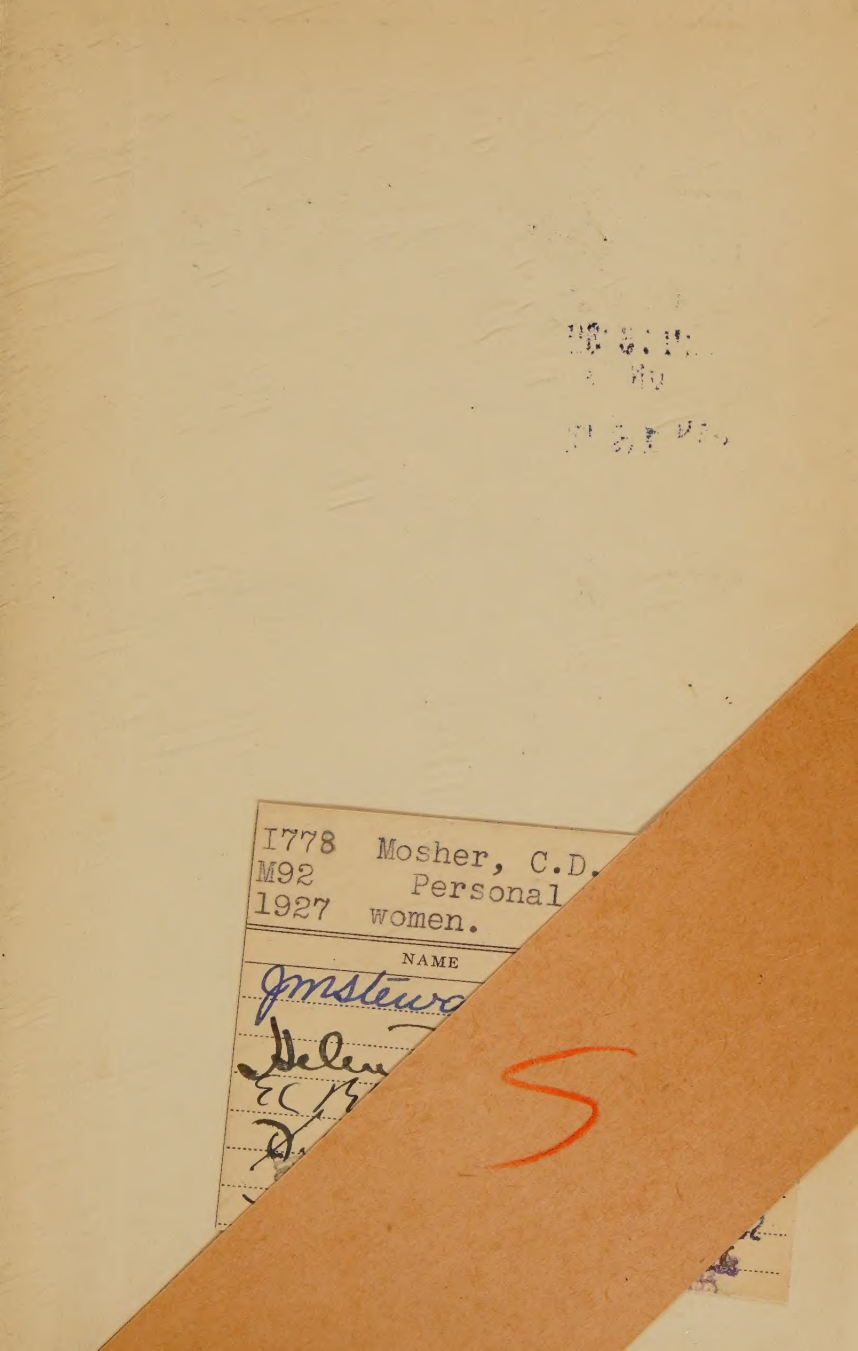
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